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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,639	06/20/2006	Hidetomo Miyake	65728 (45672)	3557
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EXAMINER				
AZIZ, KEITH T				
ART UNIT		PAPER NUMBER		
1791				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/583,639

**Applicant(s)**

MIYAKE, HIDETOMO

**Examiner**

KEITH T. AZIZ

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/02)  
Paper No(s)/Mail Date 6/20/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0164934 (Nishi hereafter), further in view of Japanese Patent Publication 2001-118913 (Akira hereafter).

Nishi discloses a movable stage apparatus and method for exposing a substrate plate (see title and abstract). Nishi teaches a stage with an adsorption face for holding a substrate (see item 10 of Figure 6), which utilizes negative pressure through a vacuum source to hold the article in place (see the source under item 80 in Figure 6). Nishi teaches that the vacuum source is connected through an air discharge path (see item 73 of Figure 6), and that the vacuum source is connected to adsorption ports (see item 91 of Figure 6) throughout the stage. Additionally, Nishi teaches that a gauge (see

item 71e of Figure 6) monitors the pressure of the air discharge path. Nishi does not explicitly disclose that the leak trenches (item 92 of Figure 6) are open to the side of the face of the stage.

Akira discloses a substrate suction plane that is used to maintain the flatness of a substrate during peel charging (see title and abstract). Akira teaches that the leak trenches may be open to the side of the face of the stage (see drawing 2, notably the trenches in between item 1a and 1c). It would have been obvious to one of ordinary skill in the art at the time the invention was made to open the leak trenches of Nishi as taught by Akira. The rationale to do so would have been the motivation to prevent a non-uniform substrate from being generated (see paragraph [0017]).

With regards to claim 2, Nishi teaches that the pressure detecting means is provided in the path that is used by each of the adsorption ports (see the connection of 71e to item 73 in Figure 6).

With regards to claim 3, Nishi teaches that valves used to open and close the air discharge path (see items 71a and 81a of Figure 6) may be opened or closed based on the pressure detected by the pressure gauge (see the lower portion of Figure 7).

With regards to claim 4, Nishi teaches that the valve may be switched to a closed state based on a command from the control unit (see paragraph [0012]). It would have been obvious to one of ordinary skill in the art to close the valve when there is no vacuum state detected, so as to allow a new tank to be connected in the system. It also would have been obvious to one of ordinary skill in the art to close the valve if no vacuum is detected but the system is on, so that the pressure gauge could be tested.

With regards to claim 5, Akira teaches that the trenches are formed in a grid pattern (see drawing 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the leak trenches of Nishi in a grid pattern as taught by Akira. The rationale to do so would have been the motivation to prevent a non-uniform substrate from being generated (see paragraph [0017]).

With regards to claim 6, Nishi teaches that the adsorption ports are formed at the center of the region surrounded by the trenches (see the location of 91 in Figure 6).

With regards to claim 7, Nishi teaches that the adsorption ports may be made in a striped pattern (see item 10 of Figure 1).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi and Akira as applied to claims 1-7 above, and further in view of Japanese Patent Publication 2000-147528 (Norihiko hereafter).

Nishi and Akira teach the apparatus of claim 1.

Nishi and Akira do not explicitly disclose the use of two devices, and that the two devices face each other and move close together while holding the substrate.

Norihiko teaches the use of two substrate adsorption stages, and that the two stages face one another and are brought close together, as little as 5 microns, to bond the substrates to each other (see Drawings 1 and 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an additional substrate stage as taught by Norihiko in the apparatus of Nishi and Akira. The rationale to do so would have been the motivation to abolish the presence of an uneven picture (see paragraph [0032]).

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to show the state of the art with respect to adsorption stages.

U.S. Patent 6,893,311 to Lee et al., drawn to an LCD bonding machine and method for fabricating the LCD.

U.S. Patent 7,102,726 to Byun et al., drawn to a system for fabricating a liquid crystal display

U.S. Patent 7,040,525 to Lee et al., drawn to a stage structure in a bonding machine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH T. AZIZ whose telephone number is (571)270-7658. The examiner can normally be reached on Monday through Thursday 8:00am-6:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna I. Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTA/

/KHANH NGUYEN/  
Primary Examiner, Art Unit 1791